Bodh Solutions

Bodh Solutions

➢ About Us

Bodh Solutions is an Engineering Consultancy Service provider in the field of Power Generation, Air Quality Control System and Water Systems specializing in providing Performance Analysis and Engineering Solutions to our Clients.

■ Key Areas

- Conventional Thermal Power Plants
- Combined Cycle & Cogeneration Plants
- Air Quality Control System (AQCS)
- Water Intake & Plant Water System

Contact:
Tel: +91 84999 92373
e-mail: prabodhvk@gmail.com

Bodh Solutions

Bodh Solutions

➢ What we do

We provide Consultancy and Advisory Services to Plant Owners and EPC Contractors

■ Our Services

Owner's Engineering
- Feasibility Studies
- Packaging Concept
- Tender Engineering
- Bid Evaluation
- Review Engineering

EPC Engineering
- Basic Engineering
- System Integration
- Layouts
- Purchase Specification and Bid Evaluation
- Control Write-ups

Plant Operations Review and Performance Analysis

Plant Efficiency Monitoring

Bodh Solutions – Team Members

- Our Team

Our team consists of professionals with vast experience in reputed Power Sector organizations like NTPC, OEMs like Doosan / Doosan Babcock and EPC Contractors like Tata Projects Limited

Associates

Prabodh V K
Consultant, Thermal Power Plants

Specialization:
Plant Engineering & System Integration
Boiler & AQCS
Water Intake & Plant Water Systems

Vinay Kumar
Independent Director, GSECL
Engineering and Project Consultant

Specialization:
Project & Engineering Management
Boiler & AQCS
Material Handling

Parasuram Padmanabhan
Engineering and Project Consultant

Specialization:
Project & Engineering Management
Water Intake & Plant Water Systems

Bodh Solutions - Experience

Our Experience

Job Description	Project	Client	Plant Owner	Year
Study and Resolution of issues in 660 MW Russian make Supercritical Coal fired Boilers	3 x 660 MW Barh STPP Stage - I, NTPC LTd	NTPC Ltd	NTPC Ltd	2025 (Ongoing)
Ramp Rate Evaluation for 660 MW Supercritical Coal Fired Unit	3 x 660 MW Lalitpur Thermal Power Plant, LPGCL	LPGCL	LPGCL	2024-25
Assessment of Technical Issues in Owner's Claims to OEM for BTG Package	3 x 660 MW Lalitpur Thermal Power Plant, LPGCL	Bhavi Tech Associates	LPGCL	2023
Performance Assessment and Failure Analysis of 3 x 200 tph Natural Gas Fired Boilers	Dangote Fertilizer Plant, Lekki, Nigeria	TCR Advanced Engineering Limited / SAIPEM	Dangote Fertliser Limited	2023
Owner's Engineering for SCR System	2 x 660 MW Buxar Thermal Power Plant, SJVNL	P. Padmanabhan / SJVNL	SJVNL	2022
Supervision of Erection and Commissioning of 420 MW Combined Cycle Power Plant	420 MW Ashuganj East Power Project, Bangladesh	EGNET / POYRY	APSCL, Bangladesh	2021-22
Review of R&M of Boiler and Combustion System	4 x 600 MW Jharsuguda IPP, Vedanta	VVR Consultants	Vedanta	2021

Bodh Solutions - Experience

Our Experience

Job Description	Project	Client	Plant Owner	Year
Feasibility Study of using Vertical Roller Mill for Dry Limestone Grinding for Wet Limestone FGD Application	-	EngiNet	Loesche Energy Systems India Pvt. Ltd	2020-21
Feasibility Study of Interconnection of CW System for 3 x 660 MW Units for Power Optimization	3 x 660 MW Talwandi Sabo Power Plant, Vedanta	EngiNet / VVR Consultants	Vedanta	2019

Bodh Solutions – Project Summary

Assignment (Ongoing Project)	Study and Resolution of issues in 660 MW Russian make Supercritical Coal fired Boilers
Project	**3 x 660 MW Barh STPP Stage – I, NTPC Ltd.**
Client	NTPC Ltd.
Owner	NTPC Ltd.
Main Project Features	Resolution of Operational and Commissioning issues of Russian make 660 MW Supercritical Coal fired T-type boiler • Russian make – TKZ, Russia, Side Wall Fired T-type boilers with two-pass Vertical Tube Evaporator Circuit with twin backpass • Erection and Commissioning completed by Doosan
Positions	Consultant – Boiler Expert
Tasks	**Completed – Investigation of frequent tube leakages in Low Temperature Reheater (LTRH)** • Review of Tube Leakage data in LTRH • Review of Boiler Design – Tube arrangement and gas velocities, erosion protection arrangement • Review of CAVT data • Recommendation for mitigation of tube leakage including design modifications required

Bodh Solutions – Project Summary

Assignment	**Ramp Rate Evaluation of 660 MW Supercritical Coal fired Unit**
Project	**3 x 660 MW Lalitpur Thermal Power Plant, LPGCL**
Client	Lalitpur Power Generation Company Ltd. (LPGCL)
Owner	Lalitpur Power Generation Company Ltd. (LPGCL)
Main Project Features	Evaluation of Current and Achievable Ramp Rates for units in view of new CEA Regulations regarding increased ramp rate requirements for coal fired thermal power station
Positions	Consultant
Tasks	• Review of Plant Design Performance Data • Review of Plant P&IDs • Review of Plant Control Write-ups and Control Schematics • Preparation of Ramp Test Procedure • Evaluation of achieved ramp rates • Assessment of Limitations in achieving mandated Ramp Rates • Recommendations for improvement in Operating and Control Procedures for improving Ramp Rates

Bodh Solutions – Project Summary

Assignment	**Assessment of Technical Issues in Owner's Claim to EPC Contractor for BTG Package**
Project	**3 x 660 MW Lalitpur Thermal Power Plant, LPGCL**
Client	Bhavi Tech Associates
Owner	Lalitpur Power Generation Company Ltd. (LPGCL)
Main Project Features	Coal fired Supercritical Unites of 660 MW with Boilers and Turbo-Generators (with Auxiliary System) supplied by BHEL
Positions held	Consultant
Tasks	• Review of Contract Documents for BTG Package • Review of Design Data • Review of Performance Guarantee Tests Procedure and Reports prepared by OEM • Review and Assessment of Counter-claims filed by Owner regarding Plant Commissioning and other Technical Issues including PG Tests • Preparation of Assessment Report

Bodh Solutions – Project Summary

Assignment	**Performance Assessment and Root Cause Analysis of Tube Failures in 200 tph Natural Gas fired Boilers**
Project	**3 x 200 tph Natural Gas Fired Boilers, Dangote Fertiliser**
Client	TCR Advanced Engineering Pvt. Ltd. / SAIPEM Constructions Nigeria Ltd.
Owner	Dangote Fertiliser Limited
Main Project Features	3 x200 tph NG fired D Type boiler supplying steam to Fertilizer process and Steam Turbine. Boilers were facing multiple tube failures since commissioning
Positions held	Consultant (Process)
Tasks	• Review of Boiler Design and Operating Data • Review of Start-up Procedures • Review of Measurement Schemes (for Drum Level / Air flow etc) and Control Write-up / Logics • Assist RLA team in identifying locations for sampling / testing • Analysis of past failures over 3 years including failure analysis reports by experts to identify process conditions causing repeat failures • Recommendations for modifications in Measurement Schemes, Operating and Control procedures to avoid future failures

Bodh Solutions – Project Summary

Assignment	**Review of Engineering Documents for SCR and Ammonia Handling System –2 x 660 MW Buxar TPP, Buxar**
Project	**2 x 660 MW Buxar TPP, Buxar, SJVNL**
Client	P Padmanabhan (Chief Principal Consultant, STPL)
Owner	SJVN Thermal (P) Ltd. (STPL)
Main Project Features	660 MW Coal fired Supercritical boilers with Selective Catalytic Reduction System for NOX reduction supplied by L&T-MHI Power Boilers
Positions held	Consultant to Owner's Chief Consultant
Tasks	Review of Engineering documents submitted by EPC contractor for SCR system, Catalyst and Anhydrous Ammonia Handling and Supply system. Scope of review included: • System P&IDs, Equipment Sizing Calculations, GA and Datasheets • Ammonia Handling System Design & Layout including compliance PESO / CCOE Requirements • Safety Procedures, Control Write-Ups and Instrument Datasheets • Review of Physical Model Test Procedure and Witness of Test • O&M Manuals, Mandatory Spares and BBU • PG Test Procedure

Bodh Solutions – Project Summary

Assignment	**Owner's Engineering (Site Supervision) at 400 MW Ashuganj East Combined Cycle Power Project, Bangladesh**
Project	**400 MW Ashuganj East Combined Cycle Power Project, Bangladesh**
Client	EGNET / Afry
Owner	Ashuganj Power Station company Ltd. (APSCL)
Main Project Features	400 MW Single Shaft Combined Cycle Project under EPC Contract
Positions held	Mechanical Engineer
Tasks	Site supervision for Erection and Commissioning of Mechanical systems including HRSG, Gas Conditioning and Compression System, Water Intake, Discharge and CW System, Water Treatment System and Fire Protection System • Review of Design Drawings • Review of Site Test Procedures • Review of Work Procedures • Witness of Site Commissioning Tests

Bodh Solutions – Project Summary

Assignment	**Review of R&M Proposal for Boiler and Combustion systems at 4 x 600 MW Jharsuguda TPP, Orissa**
Project	**4 x 600 MW Jharsuguda TPP, Vedanta, Orissa**
Client	VVR Consultants
Owner	Vedanta Ltd.
Main Project Features	600 MW Natural Circulation Boilers – Performance issues included deviations in Steam Temperatures, tube failures and high NOx emissions
Positions held	Consultant
Tasks	• Review of Boiler Design and Operating Data • Review of Operating Coal Data • Performance Analysis of Boiler • Identifying gaps in performance and availability • Review of Vendor Offers for Boiler R&M • Review of Vendors Guarantees for Boiler • Recommendation for R&M to achieve Design Performance

Bodh Solutions – Project Summary

Assignment	**Feasibility Study of utilizing Dry Limestone Grinding using Vertical Roller Mill for Wet Limestone FGD Process**
Client	**EngiNet / Loesche Energy Systems India Pvt. Ltd**
Main Project Features	Use of Vertical Roller Mills for on-site grinding of Limestone for Wet Limestone based FGD
Positions held	Consultant
Tasks	Technical comparison of Limestone griding and slurry preparation using a dry Vertical Roller Mill supplemented by a Dust Collection and slurry preparation system versus the conventional Wet Ball Mill system and inputs for cost estimation of the two system for final techno-economic analysis. • Sizing of Limestone Grinding Mill for 2 x 200 MW Plant • Preliminary Sizing Calculation for auxiliary system including vent fans, bag filters etc. • Evaluation of different option of slurry preparation system • Development of P&ID and Layout for complete system • Sizing of slurry preparation system equipment and evaluation of power consumption • Technical Comparison of Wet Ball Mill system and Dry Vertical Roller Mill system with slurry preparation system

Bodh Solutions – Project Summary

Assignment	**Bid Engineering Support for 2 x 350 MW FGD System at Bina TPP to EPC Bidder**
Project	**2 x 350 MW Jaypee Bina TPP**
Client	EngiNet / Valmet
Owner	Jaiprakash Power Ventures Limited
Main Project Features	Retrofit project of Wet Limestone FGD system in existing 250 MW Units
Positions held	Consultant
Tasks	Review of Tender Specifications and advice to Bidders • Evaluation of Guarantee Risks • Evaluation of Major Technical Risks • Advice to Bidder (Valmet) on Risk Mitigation Strategies

Bodh Solutions – Project Summary

Assignment	**Feasibility Study for interconnection of CW system of 3x660MW of Talwandi Sabo TPP, TSPL**
Project	**3x660MW of Talwandi Sabo TPP, TSPL**
Client	EngiNet / VVR Consultants
Owner	Talwandi Sabo Power Limited (Vedanta)
Main Project Features	2 x 50% CW Pumps provided for each unit independently with no interconnection
Position	Consultant
Tasks	Techno-economic evaluation of interconnection of CW system for 3 units (• Hydraulic Analysis of complete Cooling Water System of three (3) with various Interconnection sizes and combinations of pumps in operation • Evaluation of Pump operating regime and Unit CW flow for various interconnection sizes and pump combinations • Evaluation of impact of change in cooling water flow on Cooling Tower Performance, Condenser Vacuum and Turbine Heat Rate using OEM performance curves • Evaluation of system performance and pump operating regime with different pump speeds • Economic evaluation of modification cost and savings in operating cost with various pump combination